PATENT

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IN THE CLAIMS:

Please find below a listing of all of the pending claims. The statuses of the claims are set forth in parentheses.

1. (Currently Amended) A method of managing load in a power system comprising:

determining whether a load demand on at least one power system component of a plurality of power system components needs to be varied, wherein the plurality of power system components includes a first set of power system components, wherein load demand includes a percentage of electric current drawn by the at least one power system component;

calculating a new load demand to be placed on the at least one power system component based on a load demand on, and a maximum loading value of, at least one other functioning power system component of the plurality of power system components in response to determining the load demand on the at least one power system component needs to be varied, wherein the at least one other functioning power system component has a maximum loading value which is different from the maximum loading value of the at least one power system component; ~~and~~

controlling the load demand on the at least one power system component to be equal to the calculated new load demand by changing the load demand on the at least one power system component such that the maximum loading values of the at least one power system component and the at least one other functioning power system component are not exceeded ~~and the load demand on the at least one other functioning power system component~~;

determining whether load demands on a second set of power system components need to be varied, wherein the second set of power system components receive power from the first set of power system components;

calculating new load demands to be placed on the second set of power system components in response to determining the load demands on the second set of power system component need to be varied; and

controlling the load demands on the second set of power system components to be equal to the calculated new loads for the second set of power system components.

2. (Original) The method of claim 1, wherein determining whether load demand on the at least one other power system component needs to be varied further comprises determining whether a failure of one of the plurality of power system components occurred.

3. (Previously Presented) The method of claim 2, wherein determining a new load demand to be placed on the at one power system component further comprises:

determining a total load demand on the plurality of power system components, wherein the plurality of power system components are similar to the failed power system component and are functioning; and

dividing the total load demand equally among the plurality of power system components.

4. (Original) The method of claim 3, wherein determining a new load demand to be placed on the at least one power system component further comprises determining a new load demand that is less than a maximum loading value of the at least one power system component.

5. (Previously Presented) The method of claim 2, wherein calculating a new load demand to be placed on the at least one power system component further comprises:

storing optimal load demands for the plurality of power system components; and

determining new load demands for the plurality of power system components based on the stored load demands.

6. (Canceled).

7. (Original) The method of claim 1, wherein determining whether a load demand on at least one power system component of a plurality of power system components needs to be varied further comprises determining whether a request to change the load demand of the at least one power system component is received.

8. (Original) The method of claim 7, wherein the request is a power system component maintenance-related request.

9. (Previously Presented) The method of claim 1, wherein determining whether a load demand on at least one power system component of a plurality of power system components needs to be varied further comprises:

determining whether load demands on the plurality of power system components are balanced based on a balancing scheme; and

calculating a new load demand comprises calculating new load demands for the plurality of power system components based on the balancing scheme in response to the load demands on the plurality of power system components being unbalanced.

10. (Original) The method of claim 9, wherein the balancing scheme is associated with at least one of dividing a total load demand on the one or more power system components substantially equally, providing substantially equal spare capacity for the one or more power system components, preventing any of the one or more power system components from exceeding a maximum loading value, and providing greater spare capacity for critical loads.

11. (Previously Presented) The method of claim 1, wherein controlling the load demand on the at least one power system component to be equal to the determined new load demand further comprises directing the at least one power system component to change its load demand to the new load demand.

12. (Previously Presented) The method of claim 1, wherein controlling the load demand on the at least one power system component to be equal to the determined new load demand further comprises:

directing a power system component drawing current from the at least one power system component to vary its current draw on the at least one power system component.

13. (Original) The method of claim 1, wherein the plurality of power system components comprise power system components substantially located in a data center and providing power to meet the load demand of a plurality of computer systems housed in the data center.

14. (Original) The method of claim 1, wherein the at least one power system component comprises power system components in a level in a power grid.

15. (Currently Amended) A system for balancing load demands on power system components comprising:

a first set of power system components in the power system; and

a load manager calculating load[[s]] demands to be placed on the first set of components based on a load balancing scheme, wherein load demands include a percentage of electric current drawn by the first set of components; and controlling load demands on the first set of the power system components to be equal to the calculated load demands;

a second set of power system components receiving power from the first set of power system components,

wherein the load manager sends control data to the first set of power components to control the load demands to be equal to the calculated load demands, and

the load manager calculates load demands to be placed on the second set of power system components based on the load balancing scheme and sends control data to the second set of power system components to control the load demands on the second set of power system components to be equal to the calculated load demands for the second set of power system components.

16. (Canceled).

17. (Previously Presented) The system of claim 15, wherein the load manager is connected to a data repository storing optimal load demands for the first set of power system based on modeling the power system in different failure states, and the load manager determines the new load demands for the first set of power system components by identifying the new load demands from the stored optimal load demands that are associated with the current state of the power system.

18. (Previously Presented) The system of claim 15, wherein the load manager is operable to detect a failure of a power system component of the first set of power system components from the received data and to control the load demands on the first set of power system components based on the load balancing scheme in response to detecting the failure.

19. (Original) The system of claim 15, wherein the load manager is operable to implement the load balancing scheme in response to at least one of a received request to change the load demands on one or more of the first set of components and a determination that the load demands on the first set of power components do not meet predetermined conditions associated with the load balancing scheme.

20. (Original) The system of claim 15, wherein the load balancing scheme is associated with at least one of dividing a total load demand on the one or more power system components substantially equally, providing substantially equal spare capacity for the one or more power

system components, preventing any of the one or more power system components from exceeding a maximum loading value, and providing greater spare capacity for critical loads.

21. (Original) The system of claim 15, further comprising a fast transfer load device connected to one power system component of the first set of power system components, the fast transfer load transfer device controlling load demand on the one power system component in response to detecting an over loading on the one power system component.

22. (Original) The system of claim 21, wherein the load manager implements the load balancing scheme after the fast transfer load device controls the load demand on the one power system component.

23. (Original) The system of claim 15, wherein the power system further comprises a second set of power system components receiving power from the first set of power system components, and the load manager directs at least one power system component of the second set of power system components to vary the load demand on at least one power system component of the first set of power system components to control the load demands on the first set of power system components based on the load balancing scheme.

24. (Original) The system of claim 15, wherein the load manager controls the load demands on the first set of power system components based on the load balancing scheme by directing at least one power system component in the first set of power system components to vary load demand.

25. (Original) The system of claim 15, wherein the first set of components comprise power system components in a level in the power system.

26. (Original) The system of claim 15, wherein the first set of power system components comprise redundant components supplying power to the same load.

27. (Currently Amended) An apparatus for managing load demands in a power system comprising:

means for determining whether load demands on a plurality of power system components in the power system need to be varied, wherein the plurality of power system components includes a first set of power system components and load demand includes a percentage of electric current drawn by the at least one power system component;

means for calculating new load demands to be placed on the plurality of power system components based on maximum loading values of the plurality of power system components and in response to determining the load demands need to be varied; ~~and~~

means for controlling the load demands on the plurality of power system components to be equal to the calculated new load demands by shifting the load demands between the plurality of power system components such that the maximum loading values are not exceeded, and wherein at least two of the maximum loading values are different; ~~such that the new load demands on the plurality of power system components are balanced~~

means for sending control data to the first set of power components to control the load demands to be equal to the calculated load demands, and

means for calculating load demands to be placed on a second set of power system components receiving power from the first set of power system components; and

means for sending control data to the second set of power system components to control the load demands on the second set of power system components to be equal to the calculated load demands for the second set of power system components.

28. (Original) The apparatus of claim 27, wherein the means for determining whether load demands on the plurality of power system components need to be varied further comprises means for determining whether load demands on the plurality of power system components need to be varied when a failure of one of the plurality of power system components is detected or when the power system is in a steady state.

29. (Original) The apparatus of claim 27 further comprising data repository means for storing optimal load demands for the plurality of power system components and the means for determining new load demands retrieves the new load demands from the stored optimal load demands.

30. (Original) The apparatus of claim 27, further comprising fast load transfer means connected to at least some of the plurality of power system components for varying the load demands on one or more of the power system components connected to the fast load transfer means in response to detecting an overloading of a power system component connected to the fast load transfer means.

31. (Canceled).

32. (Previously Presented) The system of claim 15, wherein the load manager is operable to calculate the load demands to be placed on the first set of components by determining a total load demand on the first set of components; and dividing the total load demand equally among the first set of components.